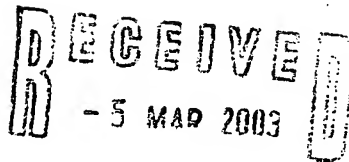




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**Your Reference:** DY3015  
**Application No:** GB 0218777.1

28 February 2003

Dear Sirs

**Patents Act 1977: Search Report under Section 17(5)**

I enclose two copies of my search report and a copy of the citations. Claim 1 appears largely speculative in the light of the disclosure in the description which is limited to use of a known fluid diode. In order to produce a meaningful search in the light of some of the docs found during that search, especially the crank case ventilation arrangements such as WALKER the search has been limited to:

- a) A 'vent' associated with a chamber or system containing gas carrying higher density fluid particles, the vent comprising a vortex diode or similar swirl chamber or;
- b) A vent for a bearing case, the vent including a chamber through which fluid can flow along either of two flow paths, the resistance to flow being relatively high if the fluid follows the first path and the resistance being relatively low when the fluid follows the second path.

Consequently some further searching may be required at a later stage.

It should be noted that the WALKER and ATOMIC ENERGY documents are examples of many similar arrangements.

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†Use of E-mail: Please note that e-mail should be used for correspondence only.



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Application No: GB 0218777.1

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28 February 2003

## Publication

I estimate that, provided you have met all formal requirements, preparations for publication of your application will be completed soon after **6 January 2004**. You will then receive a letter informing you of completion and telling you the publication number and date of publication.

## Amendment/withdrawal

If you wish to file amended claims for inclusion with the published application, or to withdraw the application to prevent publication, you must do so before the preparations for publication are completed. **No reminder will be issued.** If you write to the Office less than 3 weeks before the above completion date, please mark your letter prominently: **"URGENT - PUBLICATION IMMINENT"**.

Yours faithfully

J. C. Barnes-Paddock  
Examiner



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**Application No:** GB 0218777.1  
**Claims searched:** 1-21

**Examiner:** J. C. Barnes-Paddock  
**Date of search:** 28 February 2003

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance	
X	1,3,13,14	US4433539	(UNITED TECHNOLOGIES) See Figures 1-3. Gas turbine engine bearing case vent with two position flow obstructing member 56, 76 to control vent flow.
X	1-5,9-13	US4269607	(WALKER) See the Figures. Exemplary lubricant collecting vortex vent member.
X	1-5,7	US4131134	(OWEN) See Figure 4. Convergent/divergent tangential inlet to vortex ventilation device.
X	1-5,16	EP0392713 A	(ATOMIC ENERGY) See the Figure. Series mounted opposed vortex chambers for venting.
X	1-5,17	GB2108714 A	(ATOMIC ENERGY) See Figure 2. Exemplary cascade of vortex chambers.
X	1-5,9,12	JP9303130 A	(KUBOTA) See the Figures and WPI abstract accession No: 1998-060210 [06]. Vortex vent element within a component casing.
A		GB2084266 A	(ROLLS ROYCE) Turbine bearing chamber vent with oil separator.

### Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.



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**Application No:** GB 0218777.1  
**Claims searched:** 1-21

**Examiner:** J. C. Barnes-Paddock  
**Date of search:** 28 February 2003

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKCV:

F1G F2A G3H B2P

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

F01D F01M F15C B04C

The following online and other databases have been used in the preparation of this search report:

Online: WPI, EPODOC, PAJ